

Introducing Nasalization in Nkonya

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Abstract

This paper examines some aspects of nasalization in Nkonya, a Guang language spoken in the mid-part of Volta Region of Ghana, by the use of the framework of autosegmental phonology. It specifically examines the important role of the syllable in explaining the phenomenon of nasalization and also tentatively postulates that the feature [+nasal] is in the process of getting extinct in Nkonya.

Index Terms: nasalization, syllable, autosegmental phonology, Nkonya, Guang language family

1. Introduction

1.1. Background of language

Nkonya refers to the language and the people who speak it. It is spoken in the Volta Region of Ghana by 25,599 people [1]. Nkonya has two main dialects: the Northern and Southern dialects. Following [2], Nkonya has been considered by many in the literature as a North Guang language, rather than a South language, in the Guang branch of the Niger-Congo language family. However, [3] calls for an empirical justification for such classification.

1.1.1. Basic language information

Nkonya has 23 distinct consonant sounds made up of 19 oral and 4 nasal sounds. They are: /f, s, p, t, tʃ, k, kp, h, v, b, d, dʒ, g, j, r, l, w, gb/ and /n, m, ɲ, ŋ/ accordingly. Nkonya has 18 phonemic vowels consisting of 9 oral /i, ɪ, e, ε, a, ɔ, o, v, u/ and 9 nasal /ĩ, ɪ̃, ẽ, ẽ̃, ǎ, ǎ̃, ǒ, ǒ̃, ũ/.

The Nkonya language belongs to the type four language group described by [4], with four core syllable types: CV, V, CVC and VC in order of frequency. Only nasal consonants occupy the coda (C) position of the Nkonya syllable. The syllable is also established as the tone bearing unit since there is no one-to-one correspondence between the mora and tone in Nkonya [3].

1.2. Methodology and framework

This paper is a part of my Mphil dissertation culminated from a four-month field work in the language community. Data on both metalinguistic knowledge and observable linguistic behavior were collected, glossed, translated, transcribed and analyzed. The framework of autosegmental phonology [5] was employed because of its superb representational capacity and its provision of independence to all segmental features.

2. Nasalization

Nasalization is a phonological process where an oral segment acquires the feature [+nasal] as a result of an influence from an adjacent nasal consonant. There are two types of nasalization: vowel nasalization and consonant nasalization, both of which exist in the language. Meanwhile, as it persists in majority of languages, whereas consonant nasalization is very rare in the language, vowel nasalization is nonetheless widely spread. Secondly, we argue that, all nasal vowels in the language are underlyingly nasalized vowels. Lastly, and more strongly, we hypothesize that the feature [+nasal] is in the process of getting lost in the language. We begin with consonant nasalization before we move on to vowel nasalization.

2.1. Consonant nasalization

Consonant nasalization is a process whereby an oral consonant surfaces as a nasal consonant when it occurs in the environment of a neighbouring nasal segment. Thus, a [+nasal] consonant influences a [-nasal] consonant sound to become like it when they occur in adjacent positions. One instance of consonant nasalization observed so far is seen in the plural form of the word *kebi* 'child', where the initial velar consonant /k/ of the stem is realized as a palatal nasal /ɲ/. The following processes in (1) have been postulated for the derivation of the palatal nasal.

1. **kebi** → **ɲ-ɲɛ̃bi**
- N-kebi** (1) Prefixation of **plural N-morpheme**
- ɲ-kebi** (2) Homorganic Nasal Assimilation
- ɲ-tʃebi** (3) Palatalization/Affricativization
- ɲ-tʃebi** (4) Homorganic Nasal Assimilation
- ɲ-dʒebi** (5) Voicing Assimilation
- ɲ-ɲɛ̃bi** (6) Nasalization
- ɲ-ɲɛ̃bi** Output

As we observe in (1), before the oral plosive /k/ is realized nasal /ɲ/ it goes through six processes: prefixation of the plural morpheme /N-/, homorganic nasal assimilation, palatalization and affrication, homorganic nasal assimilation, voicing assimilation and finally nasalization.

2.2. Vowel nasalization

As it exists in many of the world's languages and in most Guang languages in particular, one can safely predict that any of the nine oral vowels in Nkonya would be nasalized when they surface in the environment of [+nasal] consonants. Generally, vowel nasalization in Nkonya is not position

bound. Thus, the direction of nasalization could be either regressive or progressive and it could hence be caused by either a preceding or a following nasal consonant as (fig 1) shows.

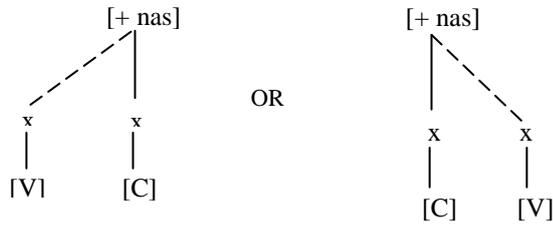


Fig. 1: *Regressive nasalization* *Progressive nasalization*

However, as we noted in (1.11), because there are very few syllables (words) in the language that have nasal codas, regressive nasalization is not very common in the language. The examples in (2) below are some words in the language that contain nasalized vowels.

2. /ã/	n.kãn.ta ‘shoulder’	mã.mã ‘yawn’
/ĩ/	m.pu.nĩ ‘intestine’	o.jĩ ‘mother’
/ĩ/	nĩ.nã ‘cook’	a.nĩ ‘we’
/ẽ/	o.srẽm.bi ‘finger’	ɲẽ.wu ‘cheek’
/õ/	o.nõ.pi ‘lip’	bõm.li ‘surround’
/õ/	a.tʃõ.nõ ‘saliva’	ɲõ.pu ‘breast’
/ũ/	o.fu.nũ ‘lie (N)’	nũ ‘listen’
/ũ/	mũ ‘then’	wũn.sa ‘bee’

A critical examination of vowel nasalization in the language as exemplified in (2) shows that, although we argued earlier that the direction of assimilation could be either regressive or progressive, not all nasal consonants are capable of transferring their nasal quality to neighbouring vowels. For example, whereas the final /u/ of *o.fu.nũ* ‘lie’ is nasalized, that of the medial is not nasalized, although both are found in the environment of a common nasal consonant /n/. The solution is not because of the position of the vowel in relation to the nasal consonant in a word, for /e/ in the word *e.srẽm.bi* ‘finger’ is nasalized, although it also occurs in a similar position with the medial /u/ in *o.fu.nũ* (thus, both precede nasal consonants). The solution however is that, oral vowels in the language can only be nasalized by a nasal consonant, if and only if, they share the same syllable with the nasal consonant. This is represented in (fig. 2 and 3) below.

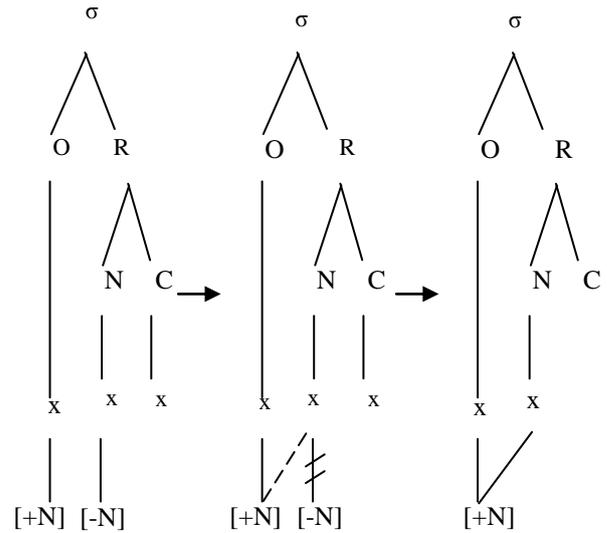


Figure 2(a): *Intra-syllabic regressive nasalization.*

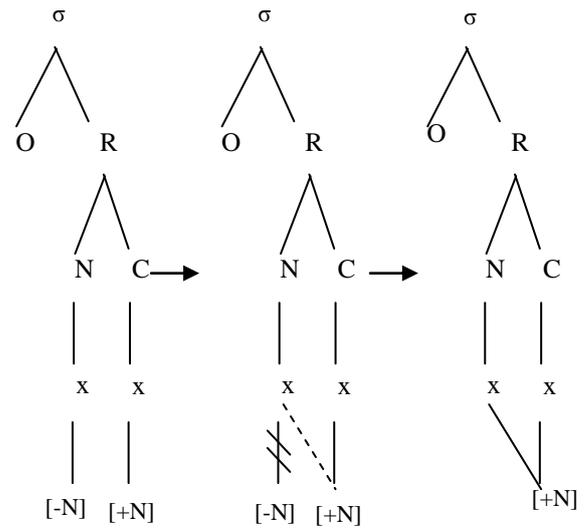


Figure 2(b): *Intra-syllabic progressive nasalization.*

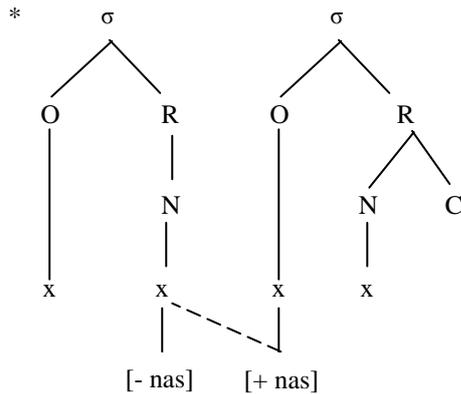


Figure 3(a): *Cross-syllabic regressive nasalization.*

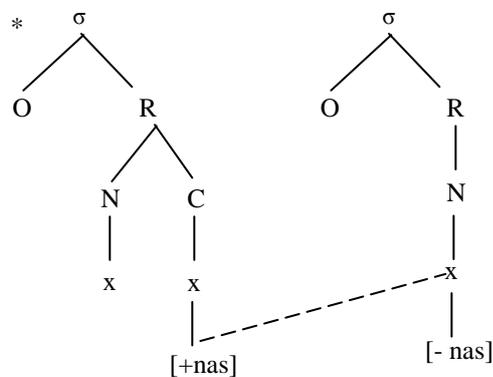


Figure 3(b): *Cross-syllabic progressive nasalization.*

Figure (2) demonstrates cases of intra-syllabic nasalization. While figure (2a) represents a case of progressive nasal assimilation, a spread of [+nasal] feature from a nasal consonant which occupies the onset (O) position of a syllable (σ) to a succeeding vowel in the nucleus (N); figure (2b) represents a case of regressive nasal assimilation where a nasal consonant in the coda (C) position of a syllable spreads its [+nasal] feature to a preceding nucleus vowel (N) within the same syllable. Either case of assimilation is accepted because the spread of nasality is within the same syllable.

On the other hand, figure (3) demonstrates attempted cases of cross-syllabic nasalization. While figure (3a) demonstrates an attempted regressive spread of nasality from a nasal consonant occupying the onset (O) position of one syllable to a preceding nucleus vowels (N) of another syllable, there is an attempt in figure (3b) to spread nasality from a nasal consonant in the coda (C) position of one syllable to a nucleus vowel (N) in a succeeding syllable. Any of these two attempts is not permitted (*) because the spread is not within the same syllable but rather from one syllable to another.

In addition to *o.fu.nĩ* are the data in (3) (selected from 2 above) which vindicate this point.

3. o.jĩ 'mother'
- a.nĩ 'we'
- a.tʃu.nõ 'saliva'

Coincidentally, all the nasalized vowels in (3) are found at the right side of the nasal consonant, whereas the non nasalized ones are found at the left side of their respective nasal consonants. This also vindicates the point that progressive nasal assimilation is more pronounced in the language than regressive nasal assimilation.

3. The status of [+nasal] in Nkonya

This part of the paper attempts to justify our earlier claim that the feature [+nasal] is gradually disappearing in Nkonya. In section (1.1.1.), it was made clear that Nkonya has both nasal and nasalized vowels. The nasalized vowels we said are conditioned by the environment they find themselves. On the other hand, the nasal vowels were said to be phonemic and that their nasality is not derived from the influence of adjacent nasal sounds. Here, we provide examples of some words that contain nasal vowels in the language.

4. okulũ	'darkness'	okũ	'handle of cutlass'
ɪfũ	'half'	akũ	'hunger'
obõ	'potter's clay'	agõ	'velvet'
ɔdɔ	'bell'	pɔ	'to be weak'
ɔsĩ	'pain'	tĩ	'to tear'
ifĩ	'piece'	ofĩ	'shin'
opioɬhɪhẽ	'sister'	ahãndẽ	'elders'
ɪbã	'fence'	kpã	'empty'
obĩẽ	'snail'		

Meanwhile, with support from [6], we argue in this paper that all nasal vowels were previously nasalized vowels. Thus, they once happened to be nasalized vowels occurring before nasal consonants, but they are realized nasal synchronically because of the truncation of the following nasal consonants that influenced them.

In his effort at developing the consonant and vowel systems of the Guang languages, [6] postulated a similar innovative phenomenon in Nkonya and the other South Guang languages (the languages beneath Nkonya in (5) are the North Guang languages while Nkonya and the others are classified as the North Guang languages), where the final nasal consonant in proto-Guang (PG) sequence of vN (vowel-nasal consonant) has dropped off and transferred its nasal quality to the preceding vowel. This, he exemplified with the following data in (5).

5.	to bite	hunger	to grow
PG	*duŋ	*a-kɔŋ	*dɔŋ
Gonja	duŋ	a-kɔŋ	dɔŋ
Chmburung	duŋ	a-kɔŋ	dɔŋ
Krachi	duŋ	a-kɔŋ	dɔŋ
Gichode	duŋ	a-kɔŋ	sɔŋ

Nawuri	duŋ	a-kɔŋ	dɔŋ
Nkonya	dū	a-kū	dā
Larteh	dū	a-kɔ	de
Cherepong	dū	a-kɔ̃	
Gwa	dī	a-ko	
Awutu	dū	a-kɔ̃	da
Efutu	dū		

Though, the data he gives are not a fair representation of the lexical items in the languages, we believe his hypothesis is highly tenable, particularly because they have similar behaviour with the present-day nasal vowels in our language. Thus, it appears that, just like his examples in (5), all nasal vowels in the language as exemplified in (4) above appear word/syllable finally. There is no case in the language where nasal vowels occur word medially or initially. Their environment of occurrence therefore makes it highly probable that, they were once nasalized by following nasal consonants. Further comparative study nevertheless may be done specifically on Nkonya lexical items that contain nasal vowels with that of the other Guang languages to either affirm or deny this tentative claim.

The second reason given for the gradual disappearance of the feature [+nasal] from the language is based on the fact that, some lexical items that contained nasal vowels have and are gradually losing them. One of the many ways of distinguishing between the two dialects of the language: Northern and Southern, is the manner they code nasality. Thus, there are some lexical items in the language that contain nasal vowels in one dialect but not in the other. Example (6) clarifies the point.

6a.	Northern	Southern	Gloss
	asā	asa	‘before’
	ahāndē	ahāndɛ	‘elders’
b.	Northern	Southern	Gloss
	ha	hā	‘give’
	asv	asṽ	‘ear(s)’

Thus, whereas /a/ and /ɛ/ are realized [-nasal] in the lexical items glossed ‘before’ and ‘elders’ respectively in the Southern dialect in (6a), /a/ and /v/ are also realized [-nasal] in the items glossed ‘give’ and ‘ear’ respectively in the Northern dialect in (6b).

In addition to this, there are other items that one finds very difficult to determine the nasal status of their vowels. One of such items that readily gives itself up is the adjectival and nominal suffix /hẽ/, alternatively realized as /hɛ/. It is often very difficult to identify the correct phonetic make-up of lexical items that contain the above suffix. Whereas some may have the nasal form for some words, others may have the oral form for other words. The two forms are, in fact, mixed up across board and most Nkonya speakers are unable to tell the ‘correct’ form when they are asked to do so.

Last but not least, another related argument to the immediately expressed one can be drawn from the data provided by Snider in (5). A careful study of the Southern Guang (Larteh-Efutu) languages reveals that, while some maintain the transferred nasal quality of the deleted nasal coda, others do not. Consequently, this goes to say that, the gradual loss of the feature [+nasal] is not peculiar to Nkonya, and that if [6]’s data were anything to go by, then the phenomenon might have started earlier from Larteh, then to Gwa and Awutu before getting to others like Nkonya.

4. Conclusion

This paper has brought to the fore some aspects of Nkonya nasalization. Among other things, we observed that while consonant nasalization is almost nonexistent in Nkonya, vowel nasalization is still active. However, we argued that nasal consonants could only spread their nasality to oral vowels only when they occur in the same syllable. This adds to the several evidence adduced in the literature to vindicate the position taken by some linguists like [7] and [8] that the syllable is “the heart of phonological representation”. It would have been difficult if not impossible to adequately explain the phenomenon of nasalization in Nkonya without the invocation of the syllable boundary.

Moreover, using intra and cross linguistic Guang evidence, we hypothesized that the feature nasality [+nasal] is in the process of getting extinct in the language.

5. References

- [1] Ghana Statistical Service, 2000 population and housing census of Ghana: Demographic, economic and housing characteristics, Accra: GSS, 2005.
- [2] Hintze, U., “Bibliographie der Kwa-Sprachen und der Sprachen der Togorestvölker”, Berlin, 1959.
- [3] Asante, R. K., “Topics in Nkonya phonology”, Mphil Dissertation, University of Ghana, 2009.
- [4] Clements, G. N. and Keyser, S., “CV Phonology: A Generative Theory of the Syllable”, Cambridge, MA: MIT Press, 1983.
- [5] Goldsmith, J., “Autosegmental Phonology”, A PhD. Dissertation, MIT, 1976.
- [6] Snider, K., “The Consonants of Proto-Guang”, *Journal of West African Languages*, 20 (1), 3-26, 1990.
- [7] Blevins, J., “The Syllable in phonological theory”, in J. Goldsmith [Ed], *The Handbook of Phonological Theory*, 206-244, Cambridge: Blackwell Publishers, 1996.
- [8] Katamba, F., “An Introduction to Phonology”, London: Longman Group, UK Ltd., 1992.